GEOMETRY.

406. Proposed by DR. R. K. MORLEY, University of Illinois.

Given the lengths of a pair of conjugate diameters of an ellipse and the angle between them; to construct (with ruler and compass) the axes of the ellipse, *i. e.*, find their lengths and the angles they make with the given diameters.

407. Proposed by S. LEFSCHETZ, Ph. D., University of Nebraska.

To construct a right triangle knowing the sum of the sides of the right angle, and the sum of one of them plus the hypotenuse.

408. Proposed by ELMER SCHUYLER, Brooklyn, New York.

Given a point A on a circle and a chord of the circle; to draw a chord through A so that it shall be bisected by the given chord.

CALCULUS.

329. Proposed by C. N. SCHMALL, New York City.

Show that the general linear differential equation $\frac{d^ny}{dx^n}+P_1\frac{d^{n-1}y}{dx^{n-1}}+P_2\frac{d^{n-2}y}{dx^{n-2}}+\ldots+P_{n-1}\frac{dy}{dx}+P_ny=V$, where P_1, P_2, P_3, ..., P_{n-1}, P_n, V are known functions of x (Edwards, *Integral Calculus*, p. 243), has a solution in the form $y=v_1\int v_2dx\int v_3dx\ldots\int\frac{Vdx}{v_1v_2v_3\ldots v_{n-1}v_n}$.

330. Proposed by C. N. SCHMALL, New York City.

X is a homogeneous function, in the nth degree, of x, y, z; Y is any function of u, v, w. If $ux=vy=wz=1+X\ldots(1)$, prove that (by Euler's Theorem), $x\frac{\partial Y}{\partial x}+y\frac{\partial Y}{\partial y}+z\frac{\partial Y}{\partial z}+\frac{n}{x}\frac{\partial Y}{\partial u}+\frac{n}{y}\frac{\partial Y}{\partial v}+\frac{n}{z}\frac{\partial Y}{\partial w}$
$=(n-1)\left(u\frac{\partial Y}{\partial u}+v\frac{\partial Y}{\partial v}+w\frac{\partial Y}{\partial w}\right)$.

NOTES AND NEWS.

Editor Slaught attended the International Congress of Mathematicians at Cambridge, England. F.

We learn from *School Mathematics and Science* that Professor J. L. Gilpatrick of Denison University, died recently. Professor Gilpatrick was a subscriber of the MONTHLY from its beginning. F.

Dr. G. E. Wahlen, who has been editing the Department of Number Theory and Diophantine Analysis, will go to Europe on a year's leave of absence. Material for his department should, therefore, be sent to Editor Finkel.

The first part of volume 5, tome II, of the French mathematical encyclopedia appeared recently. This part contains 160 pages and is devoted to functional operations and functional equations, and to trigonometic interpolation. The last seven pages are devoted to the beginning of the article on spherical functions. According to a recent announcement in the *Jahresbericht der Deutschen Mathematiker-Vereinigung*, the first part of volume 2, tome IV, has also appeared. This part contains three articles entitled, respectively, Geometric foundations of statics, Geometry of masses, and Cinematics. A very large number of additional parts are announced as in press. Although more than twenty parts have been issued no volume has yet been completed. M.

Henri Poincaré, the most eminent French mathematician and physicist, died on July 17, 1912. He was born at Nancy, France, April 29, 1854, and he rose to fame as a young man in a meteoric manner. For a number of years he has been generally acknowledged as the most eminent mathematician, and numerous biographical sketches have appeared during recent years. The most complete extant sketch of his life work is probably the one published in 1909 by Ernest Lelon under the title "Biographie bibliographie analytique des ecrits," which contains about 80 pages, and was issued by the noted firm of Gauthier-Villars of Paris, France. In January of 1909, Poincaré was received as a member of the forty immortals, and, on this occasion, the director of the Académie Française, M. Masson, gave a comprehensive sketch of his life. A translation of this appeared in the September, 1909, number of *Popular Science Monthly*. A more recent sketch prepared by E. E. Slosson appeared in the October 5, 1911, number of *The Independent* under the title "Twelve major prophets of to-day — III." M.

At the meeting of the National Education Association in Chicago, the round table conference of the Secondary Section was held on Wednesday, July 10, at 9 o'clock. The chairman is Charles M. Austin of the Central High School, Minneapolis. The amended report of the Committee of Fifteen on Geometry Syllabus was presented by Professor E. R. Hedrick of the University of Missouri, who is chairman of the sub-committee on the syllabus proper. Since the report was presented in San Francisco last July full and careful consideration has been given to all criticisms and suggestions and in the light of these numerous modifications and additions have been made, and it is in this completed form that the report will now be given by Professor Hedrick. This revised form of the report has been printed and is in process of distribution through the Department of Education in Washington. Word has just been received that the edition of 5000 copies is nearly exhausted, which would indicate that another edition will need to be issued after the Chicago report has been made. The historical introduction was included in the proceedings of the San Francisco meeting. S.

ERRATA.

Page 27, line 5, Lefschetz's article, for "Caily" read Cayley.

Page 34, counting from top of page, omit line 6.

Page 59, last line, for + read −.

Page 82, problem 376, for "a_n—k" read a_{n-k}; and in last line, for "a_n" read a_8.

Page 102, third paragraph, third line, for "$\angle BOP$" read $\angle AOP$.

Same paragraph, fifth line, for "P'_1P_1B" read P'_1P_1A.

Page 105, fifth line, for "P'_1P_1B" read P'_1P_1A.